

ABSTRACT

The invention relates to a method for producing polymethacrylimides in two steps: 1) radical copolymerization of (meth)acrylamides (A, $(\text{Me}, \text{H})\text{HC}=\text{CHCONHR}_2$) and alkyl(meth)acrylic esters (B) and optionally further ethylenically unsaturated monomers in the presence of an aqueous solvent. The monomers (A) include, in addition to acrylamide and methacrylamide, (meth)acrylamides that are substituted on their nitrogen group ($\text{R}_2 \neq \text{H}$). The monomers (B) are the (meth)acrylic esters of secondary or tertiary alcohols, preferably tert. butylmethacrylate. 2) Thermal or catalytic reaction of the copolymers produced in 1) to polymethacrylimide or for $\text{R}_2 \neq \text{H}$ to N-substituted polymethacrylimides while alkenes are separated.